

# WESCHLER INSTRUMENTS

## Yokogawa Clamp-on Power Monitors/Analyzers

**NEW**



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### CW121 Clamp-on Power Monitor

For maintenance and long term monitoring of electrical equipment and systems.

- Supports 1Ø 2W to 3Ø 4W systems
- Internal flash card memory
- RS-232 or RS-485 communications
- Sends data to internal memory, PC, optional floppy disk or printer
- Compact and light weight unit

#### SPECIFICATIONS

Voltage:	150, 300, 450 ACV
Current:	20 - 3000 ACA
Measurement Parameters:	V, A, VAR, PF, Hz, Wh
Accuracy:	±0.8% rdg ± 0.4% rng, depending on clamp probe
Record Time:	Settable from 1-30 sec., 1-30 min., 1 hr.
Flash Memory:	Compatible up to 128 MB flash card
External I/O:	One of three options for start / stop Wh
Data Accumulation:	24 hours of data in one second intervals
Wiring Error Check:	Function ensures correct measurement operations
Communications:	RS-232 standard, RS-485 available
Display:	Large backlit LCD
Safety:	UL approved
Dimensions:	4.6"W x 6.4"H x 2.0"D (117x161x51mm)
Power:	100 - 240V AC, 50/60Hz (CAT II)

#### ORDERING INFORMATION

YE/CW121-D-1/SP1 Clamp-on Power Monitor with complete accessory package

Includes all required hardware and software, except clamp-on current probes: Portable Clamp-on Power Meter, UL/CSA standard power cord, four voltage probes, RS-232 communications, 9 pin RS232 communication cable, 16 MB flash memory card and card holder, flash card reader and cable, power cable. (Supplies power from measured circuit), magnetic case for power meter, carrying case for power meter and accessories, data analysis software package.

Add suffix to part number for correct size Current Clamp-on Probes:

/C2	Clamp-on Probes for 20/200A (3pcs / set)
/C4	Clamp-on Probes for 500A (3pcs / set)
/C6	Clamp-on Probes for 700A (3pcs / set)
/C8	Clamp-on Probes for 50A (3pcs / set)
/96034	Clamp-on Probe for 3000A Jaw type
/96035	Clamp-on Probe for 3000A Flexible type

### CW240 Clamp-on Power Analyzer

Records electric energy measurements, instantaneous measurements, demand measurements, waveform measurements, voltage fluctuation measurements, harmonics measurements and leakage current.

- Supports 1Ø 2W to 3Ø 4W 4i (neutral line current) systems
- Supports two system measurements (1Ø 2W X2) (1Ø 3W X2) (3Ø 3W X2)
- Data logging interval up to 1 hour
- Internal flash card memory system
- RS-232 or RS-485 communications
- Sends data to internal memory, PC, optional floppy disk or printer

#### SPECIFICATIONS

Voltage:	150, 300, 600, 1000 ACV
Current:	200.0 ACmA - 3000 ACA
Measurement Parameters:	V, A, VAR, PF, HZ, WATTS, VA, PA
Record Time:	1 cycle- 0.5 sec., 1-30 sec., 1-60 min .
Flash Memory:	Compatible up to 512 MB flash card
Harmonic Measurement:	up to 50th
Wiring Error Check:	Function ensures correct measurement operations
Communications:	RS-232 standard, RS-485 available
Display:	Large backlit LCD
Safety:	UL approved
Operating temperature:	5-40°C, 5-80% RH (no condensation)
Dimensions:	8.11" W x 7.25" H x 2.56" D (206 x 184 x 65mm)
Power:	100 - 240V AC, 50/60Hz (CAT II)
Location:	Indoor use

#### ORDERING INFORMATION

YE/CW240-D/DA/PMI/SPI Clamp-on Power Analyzer with complete accessory package. Includes all required hardware and software, except clamp-on current probes (see below): UL/CSA standard power cord, four voltage probes, NiMH battery pack & six AA alkaline batteries, carrying case, 16 MB flash card and card reader, 9 pin RS-232 cable and Toolbox software package, users manual, quick manual, communications manual.

Add suffix to part number for correct size Current Clamp-on Probes:

/C2	Clamp-on Probes for 20/200A (4 pcs / set)
/C4	Clamp-on Probes for 500A (4 pcs / set)
/C6	Clamp-on Probes for 700A (4 pcs / set)
/C8	Clamp-on Probes for 50A (4 pcs / set)
/C10	Clamp-on Probes for 2A (4 pcs / set)
/C12	Clamp-on Probes for 3000A Jaw type (4 pcs / set)
/C14	Clamp-on Probes for 3000A Flexible type (4 pcs / set)
/96036	Clamp-on Probe for 2A measurement

Optional AP240E Data analysis software package

# WESCHLER INSTRUMENTS

## Hioki AC Power Monitors

### Clamp-On Power HiTester

- Measure up to two 3Ø, 3-wire systems
- Measure up to four 1Ø, 2-wire systems
- 5A to 5000A range
- Simultaneous recording of demand values and harmonics
- Ideal for troubleshooting & energy management



3169 ▲

#### 3169 SPECIFICATIONS

Systems:	1Ø 2-wire, 1Ø 3-wire, 3Ø 3-wire, 3Ø 4-wire (50/60 Hz)	Accuracy:	±0.2% rdg ±0.1% f.s. + Clamp accuracy (for active power)
Functions:	ACV, ACA, W, VA, VAR, PF, integrated power, Frequency, Harmonics	With 9660:	±0.3% rdg ±0.02% FS
Ranges:	150/300/600V	With 9661:	±0.3% rdg ±0.01% FS
	With 9660: 5-100A, 4 ranges	With 9669:	±1.0% rdg ±0.01% FS
	With 9661: 5-500A, 5 ranges	With 9667:	±2.0% rdg ±1.5 mV
	With 9669: 100A-1kA, 3 ranges	With 9694:	±0.3% rdg ±0.02% FS
	With 9667: 500A-5kA, 2 ranges	Harmonics:	Up to the 50th order, ±3% FS + measurement accuracy
	With 9694: 0.5A-5A, 3 ranges	Power:	100 to 240VAC, 50/60 Hz
Power:	75W to 9MW, 108 combination patterns	Dimensions:	8.3"W x 6.3"H x 2.4"D

### Power Quality Analyzer

- Measure Dips, Swells, Interruptions, Flicker, Transients
- Harmonic to the 50th order
- High frequency transient over voltage
- Detection and waveform display
- 4 current and 4 voltage channels



3196 ▲

#### 3196 SPECIFICATIONS

Systems:	1Ø 2-wire, 1Ø 3-wire, 3Ø 3-wire, 3Ø 4-wire (50/60 Hz)
Ranges:	Ch1, Ch2, Ch3: 150/300/600V AC Ch4: 60/150/300/600V AC, 60/600V DC 9660: 50/100A, 9661: 50/500A, 9667: 500/5000A, 9669: 1000A
Measurements:	1. Transient overvoltage 2. Voltage swell, Voltage dip, Voltage interruption 3. Frequency, Voltage, Current, Voltage/Current peak, Active/Reactive / Apparent power, Power factor, DPF 4. Voltage unbalance ratio, Current unbalance ratio 5. Harmonic voltage/current/power, Inter harmonic voltage/current, Harmonic voltage current phase angle, Total harmonic/inter harmonic distortion
Internal Memory:	13MB
Interface:	Flash ATA card (up to 528MB), RS-232C, LAN (10BASE-T), HTTP server function
Power:	Rechargeable battery & AC adapter
Dimensions:	11.8"W x 8.5"H x 2.7"D

#### ORDERING INFORMATION

Order Clamp-on Sensor Separately

HK/3169-20	Clamp-On Power HiTester, with voltage leads
HK/3196	Power Quality Analyzer, with voltage leads
HK/9660	100A Clamp-On Sensor
HK/9661	500A Clamp-On Sensor
HK/9669	1000A Clamp-On Sensor
HK/9667	5000A Flexible Clamp-On Sensor
HK/9694	5A Clamp-On Sensor

Other Options: Printer, memory cards, PC software, carrying case

## Fluke Power Quality Analyzer



- Voltage, current and power harmonics up to 51st
- Total harmonic distortion (THD)
- Phase angle of individual harmonics
- Watts, power factor, displacement power factor, VA and VAR
- Voltage and current waveforms
- Calculates 3Ø Power on Balanced Load from 1Ø Measurement
- Use cursors to read time and date of sags and swells.
- Catch voltage transients and waveform distortion
- See current at the instant of voltage events
- Catch and save up to 40 transients
- Correlate the cause of distortion with time and date stamps
- 3 Year Warranty

The Fluke 43 includes a hard case, voltage and current probes, FlukeView® PC software and cable, line voltage adapter/battery charger, applications manual, power quality video and user's manuals.

#### ORDERING INFORMATION

Fluke 43B Power Quality Analyzer

The Fluke 43B Power Quality Analyzer performs the measurements you need to maintain power systems, troubleshoot power problems and diagnose equipment failures. All in a rugged handheld package.

Function	Measurement	Accuracy/Selection
Volts	5.000V-600V RMS (AC & DC)	±(1%+10d)
Amps	50.00A-50.00kA RMS (AC & DC)	±(0.5%+2d)
Mains frequency	40.0-70.0Hz	±(4%+4d)
Watts, VAR, VA	250W-2.5MW	±0.04
PF, DPF	0.25-1.00	
Sags & Swells	Voltage and Current	4 min-16 days selectable
Transient Capture	40 ns pulse width Up to 40 transients	Select 20/50/100/200% above or below line voltage
Thrush Current	1A to 1000A	1s to 5 min selectable
Ohms	500.0Ω to 30.00MΩ	±(0.6%+5d)
Capacitance	50.00nF to 500.0μF	±(2%+10d)
Scope	Dc, ac, ac+dc, peak, peak-peak, Hz, duty cycle, phase, pulse width, crest factor	Sampling rate: 25MS/sec Bandwidth: Voltage BW (Channel 1): 20MHz Current BW (Channel 2): 15 kHz
Screen saves	All functions	10 screens
Recording	V/A/Hz, Power, Harmonics, Q/Cap, Temperature, Scope	4 min-16 days selectable parameters in each display mode

Battery life: Rechargeable Ni-Cd pack (charger included), 4 hrs typical (continuous)

#### OPTIONAL ACCESSORIES

i200s	240A AC current probe
80i-1000s	1000A AC current probe
i2000flex	2000A flexible AC current probe
80TK	Thermocouple module
80T-IR	Non-contact infrared temperature probe
PAC91	Parallel printer adapter

# WESCHLER INSTRUMENTS

## Fluke Three Phase Power Quality Analyzer

**NEW**

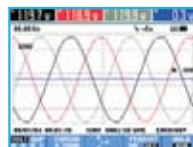


The Fluke 433 and 434 three-phase power quality analyzers help locate, predict, prevent and troubleshoot problems in power distribution systems. The new IEC standards for flicker and power quality are built in.

- Rugged, handheld recorder
- Seven hours operating time per charge on NiMH battery pack
- Transfer data files to your PC for reporting and analysis using FlukeView® software



- Automatic transient displays: never miss an event
- Auto trends: don't waste time setting up recordings



- Four voltage and four current channels
- Captures waveform data on all phases simultaneously

### Included Accessories

The 433 and 434 come with four dual-range (40A and 400A) current clamps, five voltage test leads and clips, line adapter/battery charger, color localization input decals, color wire clips for test leads, carrying case, manual and quick start guide.

### ORDERING INFORMATION

433	Power Quality Analyzer (three-phase)
434	Power Quality Analyzer (three-phase)

### RECOMMENDED ACCESSORIES

i2000 PQ4 4 pack i2000A Flexclamp

Function	433	434
Application	Three-phase	
Inputs	4 voltage and 4 current (for 3 phases and ground)	
Measurements		
Vrms, Arms, Hz, W, VAR, VA, PF, Cos Ø (DPF), Crest Factors	•	•
Harmonics and THD (V, A, W), k-factor	•	•
Inter-harmonics	Optional*	•
kWh and kVARh (forward and reverse), kVAh, demand interval	Optional*	•
Flicker (Plt, Pst, PF5)	•	•
Unbalance	•	•
Recorder/AutoTrend	•	•
System-Monitor	•	•
Real time scope/Phasor diagrams	•	•
Dips and swells/Half cycle based	•	•
Transient display	Optional*	•
Inrush current	Optional*	•
EN50160 compliance	•	•
IEC61000-4-30 compliance	•	•
Memory (screens/data)	25/5 standard 50/10 Optional*	50/10
FlukeView software and interface cable	Optional*	•
Safety rating (Meets EN61010 European standards)	CAT IV 600 V/CAT III 1000 V	
Battery life	Up to 7 hours/charge	

\*Optional functionality can be added with upgrade kit.

## Ideal Power Analyzer



### 61-806

- Backlight
- Neutral Current Capabilities
- Auto-detect Clamps
- Optional FIFO Memory

### 61-807

- 100A Neutral Current Clamp included
- Backlight
- Auto-detect Clamps
- Optional FIFO Memory

- Single- or Three-Phase Measurements
- True RMS
- Data Logging (1MB Memory)
- Auto Ranging
- Min/Max/Avg
- Password Protected On-Screen Setup
- 160 x 160 Pixel LCD
- RS-232 Interface
- Customized Data Collection
- Real-Time Clock
- Programmable Trigger-Points and Start/Stop Time

### Power Measurements

- Kilowatts (kW)
- Voltamperes (VA)
- Inductive reactive power (kVarL)
- Capacitive reactive power (kVarC)
- Power factor (PF)
- Frequency (Hz)
- Kilowatt hours (kWh)
- Reactive power per hour (kVarhL, kVarhC)

### Harmonics Measurements

- Total harmonic distortion (%THD)
- Harmonic factorization to 51st harmonic

The 800 Series Power Analyzer includes alligator clip voltage leads, three 1000A AC Clamp-on current probes, power supply/RS-232 interface and a padded carrying case.

### SPECIFICATIONS

Function	Range	Accuracy
AC Voltage	20 to 500 V (phase-neutral) 20 to 866 V (phase-neutral)	0.5% 0.5%
AC Current	10 to 1000 A (with supplied Clamp adapters)	1.0%
Active Power	866 kW (with supplied Clamp adapters)	1.0%
Reactive Power	866 kW (with supplied Clamp adapters)	1.0%
Power Factor	0.5 to 1.0	1.0%

### SP/61-474 Disturbance Program

Tracks sags, swells and transients; programmable trigger points; captures individual waveforms for analysis.

### SP/61-475 Fast-Check Program

Monitors performance of in-line energy meters; stores data and provides comparison against mechanical or electrical meters; monitors key power and energy measurements.

### SP/61-476 Check Meter Program

Captures transient waveforms caused by motor start-ups; monitors key power and energy measurements.

### ORDERING INFORMATION

SP/61-805	800 Series Power Analyzer
SP/61-806	Power Analyzer with Neutral Measure
SP/61-807	Power Analyzer with Neutral Clamp
SP/61-474	Disturbances Software Program
SP/61-475	Check-Meter Software Program
SP/61-476	Fast-Check Software Program
SP/61-453	2000/200AAC Clamp
SP/61-455	500AAC Clamp



# WESCHLER INSTRUMENTS

## LEM Power Quality Analyzers

### Three Phase Analyzer

- Power quality meter, disturbance analyzer & data logger
- Vector diagram for phase imbalance analysis
- Graphical overview mode for fast troubleshooting
- Numeric display of ACA, ACV, frequency, power, energy, flicker
- Trend recording with real time clock
- Capture 100 events with adjustable threshold
- Harmonics to the 40th with magnitude and phase
- Backlit high resolution color display



▲ **Analyst 3Q**

Supplied with carrying case, four 3000A LEM~Flex CTs, batteries, AC adaptor, test leads & RS-232 color cable.

### Single Phase Analyzer

- Backlit color display
- Oscilloscope, spectrum and multi-parameter display modes
- Measure ACV, ACA, W, VA, VAR, kWhr and Power Factor
- TRMS, Peak, Crest Factor, THD, DF and Frequency
- Harmonics to the 50th with magnitude and phase
- Measure dips, sags, swells, flicker, inrush current
- Power quality surveying with time and date stamp
- mV/A input for installed CTs



▲ **Analyst Q70**

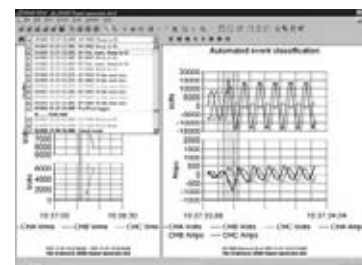
Supplied with carrying case, 3000A LEM~Flex CTs, batteries, mains adaptor, test leads & RS-232 cable.

### COLOR 3Q & Q70 SPECIFICATIONS

Nominal voltage	Star: 115/230/480V Delta: 200/400/830V
Intrinsic Error	0.2% (115V - 830V)
Resolution	0.1V
Current Ranges	30/300/3000A
Intrinsic error	0.5% (excl probe)
Resolution	0.01A
Clip-on current transducer – input voltage ranges:	0.1V, 1V AC
Power	
Intrinsic error	1%
Resolution	1W
Frequency Measurement (fundamental)	45 - 65Hz
Intrinsic error	0.2%
Resolution	0.01Hz
Events – intrinsic error	1%
Flicker – FI, Pst, Plt, IEC 1000-4-15 – intrinsic error	3%

### Dran-View™ Software

This premier Power Quality software allows the viewer to scroll through event, timeline and waveform data simultaneously, zero in on captured disturbance waveforms, scan historical trends, evaluate statistics and perform harmonic and interharmonic analysis - all with the click of a mouse. An intuitive two-pane browser, simple-to-use visualization, extensive analysis and complete report writing capabilities turns every user into a power quality expert.



### Clamp-on Analyzer

- Measure AC and DC current to 2000A
- W, VA, VAR, kWh and Power Factor, even for distorted waveforms
- TRMS, Peak, Crest Factor, THD, DF and Frequency
- Live Harmonics analysis and bargraph display
- 8 data set memory and time stamped min, max, average
- IEC61010 Cat IV for enhanced safety
- Datalogging of up to 10,000 readings
- Optional PC based datalogging software

Supplied with test leads, carrying case and alkaline batteries.  
PC Serial Cable included when ordered with software.

▲ **Analyst 2060**

### SPECIFICATIONS

	Ranges	Accuracy
Current	40/400/2000	1.5%
Voltage	4/40/400/750	1%
Watts /VA /VAR	4k/40k/400k/1200k	2.5%
PF	0.3 capacitive to 0.3 inductive	3°
KWhr	4/40/400/4000/40000	3%
Frequency	10Hz to 1kHz	1%
	45-65Hz fundamental	0.5%
Line Harmonics	% F <sub>0</sub> or RMS plus actual values up to the 25th	
DC Ripple	2% to 600%	

### ORDERING INFORMATION

LE/AN3Q	Color ANALYST 3Q with LEM analysis software
LE/Q70	ANALYST Q70 with LEM analysis software
LE/LH2060	ANALYST 2060
LE/DRANVIEW	Dran-View software for 3Q & Q70
LE/2060 SOFT	Datalogging Software for 2060

All 5-kV & 10-kV Models Include Leads and Battery

# WESCHLER INSTRUMENTS

## AEMC Three-Phase Power Quality Analyzer



PowerPad™  
3945



- True RMS single-, two- and three-phase measurements at 256 samples/cycle, plus DC
- Real-time color waveforms
- Easy-to-use on-screen setup
- Automatic current probe recognition and scaling
- True RMS voltage and current measurement
- Measures DC volts, amps and power
- Display and capture voltage, current and power harmonics to 50<sup>th</sup> order, including direction, in real time
- Capture transients down to 1/256<sup>th</sup> of a cycle
- Phasor diagram display
- VA, VAR and W per phase and total
- kVAh, VARh and kWh per phase and total
- Neutral current display for three-phase
- Transformer K-factor display
- Power Factor, displacement PF display
- Captures up to 50 transients
- Short-term flicker display
- Phase unbalance (current and voltage)
- Harmonic Distortion (total and individual) from 1<sup>st</sup> to 50<sup>th</sup>
- Alarms, surges and sags
- Screen snapshot function captures waveforms or other information on the display
- Includes DataView® software for data storage, real-time display, analysis and report generation

### SPECIFICATIONS

#### Electrical

Sampling Frequency	256 samples/cycle
Data Storage	4MB partitioned for waveforms, transients, alarms and trend recording
Voltage (TRMS)	Phase-to-Phase: 960V Phase-to-Neutral: 480V
Current (TRMS)	MN Clamp: 5mA to 100mA/120A or 2 to 240A MR Clamp: 10 to 1000Aac, 10 to 1400Adc SR Clamp: 3 to 1200A AmpFlex™: 10 to 6500A*
Frequency (Hz)	40 to 69Hz
Other Measurements	kW, kVAR, PF, DPF, kWh, kVARh, kVAh, K-Factor, Flicker
Harmonics	1st to 50th, Direction, Sequence
Power Source	9.6V NiMH rechargeable battery pack AC Supply: 110/230VAC ±20% (50/60Hz)
Battery Life	≥Eight hours with display on; ≤35 hours with display off (record mode)

#### Mechanical

Communication Port	Optically coupled RS-232
Display	1/4 VGA (320 x 240) color LCD
Dimensions	9.5 x 7 x 2" (240 x 180 x 55mm)
Weight	4.6 lbs (2.1kg)
Safety Rating	EN 61010, 600V Cat. III, Pollution Degree 2

\*Crest factor at 6500 = 1



All models include three color-coded current probes with 10 ft leads (MN93 example shown), four color-coded 10 ft voltage leads, four color-coded alligator clips, RS-232 DB9F optically coupled serial cable, NiMH battery, US 120V power cord, DataView® software, carrying bag, soft carrying pouch and user manual.

### ORDERING INFORMATION

AE/2130.75	PowerPad™ Model 3945 w/MN93 (240A)	AE/2140.14	Set of three color-coded MN193 probes (6A/120A) with 10 ft leads
AE/2130.76	PowerPad™ Model 3945 w/SR193 (1200A)	AE/2140.17	5A Adapter box
AE/2130.77	PowerPad™ Model 3945 w/24" AmpFlex™ 193-24 (6500A)	AE/2140.23	Set of four color-coded 30 ft voltage leads
AE/2130.78	PowerPad™ Model 3945 w/36" AmpFlex™ 193-36 (6500A)	AE/2140.24	Set of three color-coded MN93-30 probes (240A) with 30 ft leads
AE/2130.79	PowerPad™ Model 3945 w/MR193 (1000Aac/1400Adc)	AE/2140.25	Set of three color-coded SR193-30 probes (1200A) with 30 ft leads
AE/2130.80	PowerPad™ Model 3945 w/MN193 (6A/120Aac)	AE/2140.26	Set of three color-coded 24" AmpFlex™ 193-24-30 probes (6500A) with 30 ft leads
<b>Accessories (Optional)</b>		AE/2140.27	Set of three color-coded 36" AmpFlex™ 193-36-30 probes (6500A) with 30 ft leads
AE/2140.09	Set of three color-coded MN93 probes (240A) with 10 ft leads	AE/2140.28	One AC/DC Current Probe Model MR193-BK (black connector) (1000Aac/1400Adc)
AE/2140.10	Set of three color-coded SR193 probes (1200A) with 10 ft leads	AE/2140.29	Set of three color-coded MN193-30 probes (6A/120A) with 30 ft leads
AE/2140.11	Set of three color-coded 24" AmpFlex™ 193-24 probes (6500A) with 10 ft leads	AE/2140.30	Set of three color-coded MR193-30 probes (1000Aac/1400Adc) with 30 ft leads
AE/2140.12	Set of three color-coded 36" AmpFlex™ 193-36 probes (6500A) with 10 ft leads		
AE/2140.13	Set of three color-coded MR193 probes (1000Aac/1400Adc) with 10 ft leads		

## AEMC Single-Phase Power Quality Analyzer

**NEW**



**8230 PowerPad® Jr.**

- Displays Min, Max and Average Volts and Amps, Crest Factor, Peak value and K-Factor
- Calculates and displays Watts, VARs and VA, Power Factor and Displacement Power Factor for single-phase and balanced three-phase
- Displays total harmonic distortion (THD-F and THD-R) for voltage and current
- Displays individual harmonic values and % for Volts and Amps through the 50th harmonic
- Captures, displays and stores inrush current waveforms and statistics

- Stores up to eight screen captures
- Stores up to 1MB of trend recorded data
- Configurable from DataView® software or front panel
- Captures up to 4096 alarm events using up to 10 different thresholds
- Displays and records up to 17 different power quality parameters
- Includes DataView® software for data storage, real-time waveform display, analysis and report generation

All models include current probe with 10 ft lead and black connector, black & red 10 ft voltage leads and alligator clips, optical USB cable, NiMH battery, US 120V power cord, DataView® software, carrying bag, soft carrying pouch and user manual.

### DataView® Software included with Model 8230

- Display and analyze real-time or recorded data on the PC
- Configure all PowerPad® Jr. functions & parameters
- Customize views, templates and reports
- Create and store a complete library of configurations
- Zoom in and out and pan through sections of the graph
- Display waveforms, trend graphs, harmonic spectrums, text summaries, transients, event logs & stored alarms

### ORDERING INFORMATION

AE/2130.82	PowerPad® Jr. Model 8230 w/MN93-BK (240A)
AE/2130.83	PowerPad® Jr. Model 8230 w/SR193-BK (1200A)
AE/2130.84	PowerPad® Jr. Model 8230 w/24" AmpFlex® 193-24-BK (6500A)
AE/2130.85	PowerPad® Jr. Model 8230 w/36" AmpFlex® 193-36-BK (6500A)
AE/2130.86	PowerPad® Jr. Model 8230 w/MR193-BK (1000AAC/1400ADC)
AE/2130.87	PowerPad® Jr. Model 8230 w/MN193-BK (6A/120AAC)

### SPECIFICATIONS

Electrical	
Voltage (TRMS)	660V Phase-to-Phase, 600V Phase-to-Neutral
Current (TRMS)	MN Clamp: 5mA to 120A or 2 to 240A MR Clamp: 10 to 1000AAC, 10 to 1400ADC SR Clamp: 3 to 1200A AmpFlex®: 10 to 6500A (Crest factor at 6500 = 1)
Frequency	40 to 70Hz
Other Measurements	kW, kVAR, PF, DPF, kWh, kVARh, kVAh, K-Factor, Flicker, Harmonic Phase Shift, Phase Rotation
Harmonics	THD-R, THD-F, V, A, VA 1st to 50th, Direction, Sequence
Sampling Frequency	256 samples/cycle
Data Storage	1.5MB partitioned for waveforms, alarms & trend
Power Source	NiMH AA rechargeable battery pack AC Supply: 120/230VAC (50/60Hz)
Battery Life	>Eight hrs with display on, >40 hrs with display off (recording mode)
Mechanical	
Communication Port	Optically isolated USB
Display	1/4 VGA (320 x 240) color LCD
Dimensions	8.3 x 4.3 x 2.4" (211 x 108 x 60mm)
Safety Rating	EN 61010, 600V Cat. III, Pollution Degree 2

## AEMC Power Quality Meter

**NEW**



**8220**

- Displays Min, Max and Average Volts and Amps, Crest Factor, Peak value and K-Factor
- Calculates and displays Watts, VARs and VA, Power Factor and Displacement Power Factor for single-phase and balanced three-phase
- Displays total harmonic distortion (THD-F and THD-R) for voltage and current
- Displays individual harmonic values and % for Volts and Amps through the 50th harmonic
- Captures and displays inrush current
- Calculates & displays phase rotation & RPM

- Displays °F or °C & resistance to 2000Ω
- Conducts continuity and diode tests
- Stores up to nine complete sets of readings for all volt, amp, power, harmonics and other measurements
- Configurable from DataView® software or front panel
- Operates off batteries or optional AC adapter
- Includes DataView® software for data storage, real-time waveform display, analysis and report generation

All models include current probe with 10 ft lead & black connector, black & red 10 ft voltage leads and alligator clips, optical USB cable, six 1.5V batteries, two safety test probes, DataView® software, carrying bag, soft carrying pouch and user manual.

Three-line backlit digital display with custom icons

### ORDERING INFORMATION

AE/2130.91	Power Quality Meter Model 8220 w/MN93-BK (240A)
AE/2130.92	Power Quality Meter Model 8220 w/SR193-BK (1200A)
AE/2130.93	Power Quality Meter Model 8220 w/24" AmpFlex® 193-24-BK (6500A)
AE/2130.94	Power Quality Meter Model 8220 w/36" AmpFlex® 193-36-BK (6500A)
AE/2130.95	Power Quality Meter Model 8220 w/MR193-BK (1000AAC/1400ADC)
AE/2130.96	Power Quality Meter Model 8220 w/MN193-BK (6A/120AAC)

### SPECIFICATIONS

Voltage (TRMS)	660V Phase-to-Phase, 600V Phase-to-Neutral
Current (TRMS)	MN Clamp: 5mA to 120A or 2 to 240A MR Clamp: 10 to 1000AAC, 10 to 1400ADC SR Clamp: 3 to 1200A AmpFlex®: 10 to 6500A (Crest factor at 6500 = 1)
Frequency	40 to 70Hz
Other Measurements	kW, kVAR, PF, DPF, VA, Harmonics, Phase Rotation, Temperature, RPM, Resistance, Continuity, Diode Test
Sampling Frequency	256 samples/cycle
Data Storage	Stores nine sets of readings
Power Source	Six 1.5V AA Alkaline batteries (>8hr life with display on) AC Supply: 120/230VAC (50/60Hz) - optional
Communication Port	Optically isolated USB
Dimensions	8.3 x 4.3 x 2.4" (211 x 108 x 60mm)